PUGET SOUND ACTION TEAM
Office of the Governor, State of Washington

Results of the 2003 - 2005 Puget Sound Conservation & Recovery Plan

A Progress Report for July 2004 to June 2005
And Highlights of 2003-2005 Accomplishments

MARCH 2006

Puget Sound Action Team Partnership

Representatives from the following governments serve on the Action Team:

Washington State

Community, Trade and Economic Development
Conservation Commission
Department of Agriculture
Department of Ecology
Department of Fish and Wildlife
Department of Health
Department of Natural Resources
Department of Transportation
Interagency Committee for Outdoor Recreation
Parks and Recreation Commission

Tribal Government

Tulalip Tribes, representing Puget Sound Tribes

Local Government

City of Burien, representing Puget Sound cities
Whatcom County, representing Puget Sound counties

Federal Government ***(non-voting)***

NOAA Fisheries
U.S. Environmental Protection Agency
U.S. Fish & Wildlife Service

Chair: Director of Puget Sound Action Team staff

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STATE OF WASHINGTON

PUGET SOUND ACTION TEAM

OFFICE OF THE GOVERNOR

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March 20, 2006

To: Governor Christine Gregoire, the Washington State Legislature and all those interested in protecting and restoring Puget Sound:

On behalf of the Puget Sound Action Team partnership, I am pleased to submit this report on the ***Results of the 2003-2005 Puget Sound Conservation and Recovery Plan.*** The report summarizes significant accomplishments of the Action Team and its partners for the 2003-2005 biennial budget cycle, emphasizing results from the second half of the biennium.[1]

During the 2003-2005 biennium, the Action Team partnership reframed its efforts around seven core priorities that address threats to the health of Puget Sound. The report is organized around these priorities, which are:

- Clean up contaminated sediments.
- Reduce continuing toxic contamination and prevent future contamination.
- Reduce the harm from stormwater runoff.
- Prevent nutrient and pathogen pollution caused by human and animal waste.
- Protect shorelines and other critical areas that provide important ecological functions.
- Restore degraded nearshore and freshwater habitat.
- Conserve and recover orca, salmon, forage fish and groundfish.

The significant efforts to address Hood Canal's low dissolved oxygen problem are presented as a section within the Nutrient and Pathogen Pollution priority. The report also includes results for overall work to coordinate Puget Sound efforts, and for regional efforts to engage and educate the residents of the Sound to protect and restore its water quality, habitats and biodiversity.

As this report is released, a state, federal, tribal, local and private partnership has begun its work to develop an enhanced 2020 agenda for Puget Sound recovery, along with recommendations on new funding, organizational structure and public engagement. That 2020 agenda and associated recommendations will build from a solid foundation of achievement such as those outlined in this report by Action Team partners.

Sincerely,

Brad Ack

Chair

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[1] The first half of the biennium was covered in the 2004 State of the Sound report

Results of the 2003-2005 Puget Sound Conservation and Recovery Plan

A Progress Report for July 2004 to June 2005 and Highlights of 2003-2005 Accomplishments

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Introduction

The Puget Sound Action Team (Action Team), created in law in 1996, is the state's partnership for Puget Sound, charged with defining, coordinating and putting into action the state's environmental protection and restoration agenda for the Sound. The Action Team partnership is made up of state agencies and federal, tribal and local government representatives. The Puget Sound Council, which advises the Action Team, is composed of diverse interest groups, state legislators and tribal and local government representatives.

This report for the period from July 1, 2004 to June 30, 2005 documents the Action Team's progress during the second year of the 2003-2005 budget cycle, or biennium. It provides an accounting for the measures of progress and an overview of the high level accomplishments under the *2003-2005 Puget Sound Water Quality Work Plan*. This was the fourth two-year plan developed by the Action Team and Council to implement the *Puget Sound Water Quality Management Plan*, a long-term comprehensive plan adopted by the state and federal governments to protect and restore Puget Sound. The Action Team will include many of these results in the late 2006 *State of the Sound* report to the public on status and trends of Puget Sound water quality, habitat and species.

This 2004-2005 progress report documents the coordinated efforts of Action Team partners. While the Action Team's 2004 *State of the Sound* report found that these efforts are not yet equal to the scale of the problem, in many areas they have achieved significant progress, built on and maintained long-term gains, and limited and restored damage. Because the *2003-2005 Puget Sound Water Quality Work Plan* is a coordinated plan of actions for state agencies, the report focuses on the work of those agencies. It is important to recognize that the progress made in Puget Sound, including many of the results in this report, would not have occurred without the ongoing and significant contributions of local, tribal and federal governments, private entities, non-governmental organizations, and individual citizens.

Highlights of 2003-2005 Efforts

The *2003-2005 Puget Sound Water Quality Work Plan* included outcome measures for the biennium that were identified by the Puget Sound Action Team and Council when they developed the plan. Some of the results included in this report are slightly different from the original measures, because as the biennium unfolded, measures were revised to better align with internal agency work plans. High-level accomplishments and significant events of the entire biennium are listed below, while the sections that follow provide results for the second year covered by the plan.

▶ Preventing and reducing water pollution

Hood Canal

A significant water quality problem that emerged during the 2003-2005 biennium was the Hood Canal low dissolved oxygen problem. The state's response involved almost all Action Team partners in a coordinated state, local, federal and tribal response. Working with key agencies and local partners, the Puget Sound Action Team staff led the state's efforts in developing a *Preliminary Assessment and Corrective Action Plan for Hood Canal* in cooperation with the Hood Canal Coordinating Council. Action Team staff continue to play a lead role by coordinating the Hood Canal Dissolved Oxygen Program, a partnership of 38 organizations that are working together to help solve the water quality problems in Hood Canal.

The state and federal governments appropriated supplemental funding administered by the Action Team staff in 2004 to begin to develop corrective actions in Hood Canal. Action Team staff and partner agencies selected projects and managed contracts, coordinated and assisted with scientific studies, funded and helped coordinate education efforts, and provided information to Hood Canal residents. The Washington State departments of Ecology (Ecology) and Health (Health), the Conservation Commission, and other agencies committed substantial time and resources to the effort. Based on the results of early actions and preliminary scientific investigations, state and federal funding increased by $21 million for the 2005-2007 biennium. Washington's congressional delegation led by U.S. Representative Norm Dicks (D- Belfair) worked to secure funding for scientific studies to determine the causes of the problem and for corrective actions. (See detailed results page 16).

Spill Prevention and Response

In the 2003-2005 Puget Sound Plan, Ecology requested and received funding to station a tugboat at Neah Bay to assist disabled vessels in the western Strait of Juan de Fuca. Funding for the tug during the winter months helped protect the Sound from possible disastrous oil spills. At the same time, a spill that occurred in the central Sound in an oil transfer process during stormy weather, and a delay in responding to another unreported, nighttime oil spill in foggy weather highlighted the need to strengthen Puget Sound's oil spill prevention and response in new ways. Gov. Locke appointed an Oil Spill Early Action Task Force that developed recommendations for improvements, including increased inspections and training for transfer operations. The newly established Oil Spill Advisory Council in Governor Gregoire's office is carrying efforts forward into the new biennium with the assistance of Ecology staff.

Water Quality Assessment of Impaired Water Bodies

Ecology submitted Washington's Water Quality Assessment to the Environmental Protection Agency (EPA) on June 2, 2005, as an integrated report to meet the Clean Water Act (CWA) requirements of sections 303(d) and 305(b). This assessment includes a candidate list of impaired waters for 2004 that is the CWA 303(d) list for the state. To prepare this report Ecology analyzed nearly 40,000 pieces of data and reviewed over 2,000 specific

suggestions or comments on proposed water body listings. A query of the web-version of the report identifies 2,478 impairments requiring water cleanup plans across the state with 1,187 in the Puget Sound basin (48% of the total).

Toxics Reduction

Ecology's *Model Toxics Control Account Fiscal Year 2004 Report* indicates that the state met a goal set by the Washington State Legislature in 1990 to reduce hazardous waste by 50 percent from all generating facilities except commercial waste treatment, storage and disposal facilities.

Under the Persistent Bioaccumulative Toxin (PBT) Reduction initiative, Ecology and Health developed a draft Chemical Action Plan for polybrominated diphenyl ethers (PBDEs), delivering the interim draft plan for reduction of PBDE flame retardants to Gov. Locke in January 2005.

Ecology and Health began implementing the Mercury Chemical Action Plan (February 2003), which was the first chemical action plan developed under the PBT initiative.

Stormwater Guidance

Ecology updated the *Stormwater Management Manual for Western Washington* in February 2005.

The Action Team staff and Pierce County Washington State University Extension published the *Low Impact Development Technical Guidance Manual for Puget Sound.* Action Team and Ecology staff, WSU Extension and Washington Sea Grant water quality field agents helped promote low impact development through citizen and local government education, realtor classes and demonstration projects.

Shellfish Restoration

Health continued its program to monitor and classify commercial shellfish growing areas for harvest with state, local, tribal and shellfish industry partners to protect and restore water quality in shellfish growing areas. There was a net gain of 2,765 acres in the first year of the biennium that offset the net loss of 326 acres in the second year to yield an overall increase in commercial acreage of 2,439 acres for the entire biennium.

Onsite Sewage Disposal Systems

Health finished drafting a rule for State Board of Health consideration that requires Puget Sound local health jurisdictions to adopt a risk-based management plan for each local onsite sewage program. The State Board of Health adopted the rule in July 2005.

▶ Protecting and restoring habitats

Salmon Habitat Restoration

State agencies including the Department of Fish and Wildlife (WDFW), the Interagency Committee for Outdoor Recreation (IAC), the Conservation Commission, the Puget Sound Action Team staff and others worked with local watershed groups, local and tribal governments, private parties, farmers, and many others to restore habitat for salmon recovery. The Salmon Recovery Funding Board (SRFB) awarded funding for projects through salmon recovery lead entities based on local priorities, strategic plans, technical review, and requirements to track results.

Marine Conservation

The Northwest Straits Marine Conservation Initiative (NWSI) underwent a five-year evaluation that unanimously recommended that the NWSI and its six citizen-based Marine Resources Committees be re-authorized by Congress. The report praised the significant progress the NWSI has achieved toward benchmarks in the seven northern counties of the Sound. Congress acted to re-authorize the NWSI and continued funding for its regional and local work to educate the public, develop science to support policy decisions that affect marine waters, and conduct habitat restoration projects such as its nationally-recognized derelict gear removal project.

Puget Sound Nearshore Partnership

The Puget Sound Nearshore Partnership, a federal, state and local partnership, continued its efforts to develop the science and strategies to restore nearshore habitat processes on a regional scale for the Puget Sound ecosystem. In 2004-2005 the project partners identified early action projects and began to move into restoring and monitoring the large-scale habitat-forming processes for ecosystem recovery.

Updates for Land Use and Shoreline Regulations

The state helped local governments with funding and technical resources to fulfill requirements to update Growth Management Act comprehensive plans and development regulations. The region's cities and counties began updating critical areas ordinances to include best available science in protecting fish and wildlife habitats and other critical areas, with special attention to protecting anadromous fish. Ecology published updated guidance on best available science for wetlands. Ecology's *Shoreline Master Program Guidelines* (Chapter 173-26 WAC) were adopted in December 2003, and the legislature adopted a schedule and provided funding for local government updates. Ecology and the Department of Community, Trade and Economic Development (CTED) developed guidance on new requirements to regulate critical areas in the shoreline management zone under local shoreline master programs.

Aquatic Nuisance Species

The state Aquatic Nuisance Species (ANS) Committee developed and completed the state Early Detection and Rapid Response Plan for ANS. The plan contains tasks to monitor, report, verify and respond to new invaders, and defines the responsibilities of agencies responding to the invaders. The committee sent the plan to WDFW to finalize and lead in implementation. Agencies that manage invasive plants and animals will carry out the plan through a memorandum of understanding with WDFW.

▶ Species at Risk

Salmon Recovery Planning

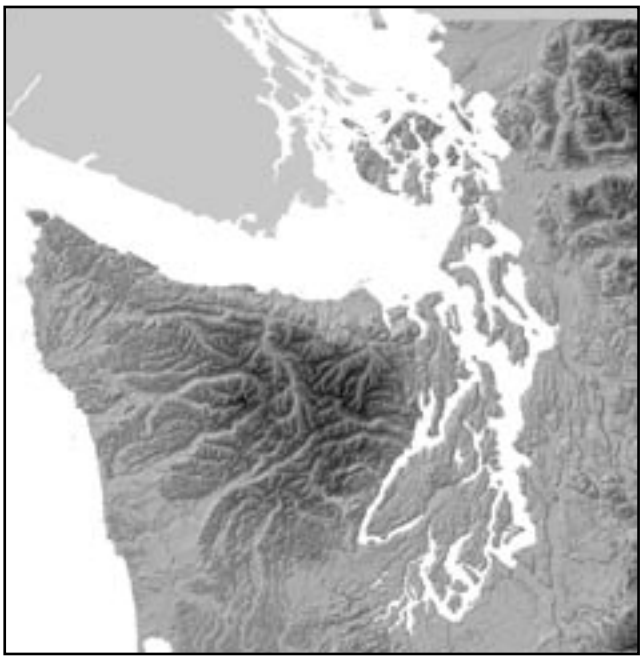
In June 2005, the Puget Sound Shared Salmon Strategy submitted the *Draft Puget Sound Salmon Recovery Plan* to NOAA Fisheries in response to the Endangered Species Act listing and federal agency requirements for Puget Sound Chinook salmon. The plan includes regional, cross-watershed strategies and actions, and 14 local watershed chapters developed by each watershed in a collaborate process.

Protection of Declining Orca Whales

The Washington State Fish and Wildlife Commission listed as threatened state species the region's orca whales, both transient and southern residents. In June 2005, NOAA Fisheries was re-considering a petition for federal listing of the southern residents under the Endangered Species Act. In November 2005, NOAA's National Marine Fisheries Service listed the three pods of southern resident orca whales as endangered.

The Role of the Puget Sound Action Team Partnership

Adopting New Priorities



As the July 1, 2003 to June 30, 2005 period covered by the *2003-2005 Puget Sound Water Quality Work Plan* began, Gov. Gary Locke met with the Puget Sound Action Team partnership and gave them a renewed charge: to focus limited state resources on critical priorities, set benchmarks and targets, and to be accountable for the results of its work. The Action Team partnership moved quickly, and in December 2003 adopted seven priorities as a new framework for its work. These seven unranked core priorities each address critical threats to the ecosystem:

- Clean up contaminated sites and sediments.
- Reduce continuing toxic contamination and prevent future contamination.
- Reduce the harm from stormwater runoff.
- Prevent nutrient and pathogen pollution caused by human and animal wastes.
- Protect shorelines and other critical areas that provide important ecological functions.
- Restore degraded nearshore and freshwater habitats.
- Conserve and recover orca, salmon, forage fish and groundfish.

Streamlining the Two-year Plan to Deliver Results

In developing the *2005-2007 Puget Sound Conservation and Recovery Plan* around the new framework of priorities, the Action Team partnership transformed the biennial planning process to a results-based plan to better coordinate and streamline its work. The 2005-2007 plan includes goals, strategies, and measurable results for the seven priorities, for the role of the Action Team partnership and for Puget Sound science. Action Team partner agencies worked to align measures with their internal work plans for more efficient reporting. They also coordinated the process with the state's Priorities of Government budget process and with Gov. Chris Gregoire's new accountability initiative.

Both the *2005-2007 Puget Sound Conservation and Recovery Plan* and the *State of the Sound 2004* (see next section) are significant accomplishments for the Action Team and Council in fulfilling their responsibility to coordinate efforts and be accountable to the public, and for meeting the charge Gov. Locke gave to them in July 2003.

Reporting on Science and Progress

The *State of the Sound 2004* report, compiled by the Action Team staff and issued in January 2005, brought information to the public on the scientific status and trends of Puget Sound water and submerged lands, habitat,

and species in a readable and visually appealing format. It also presented the significant state, federal, tribal, local and private accomplishments to protect and restore Puget Sound. The report's conclusions called for a stepped-up effort to respond to the scale of the problems posed by a rapid rate of population growth in the basin. The Action Team partners succeeded in carrying this message to the public through wide distribution and media coverage. In the spring of 2005, Governor Gregoire pledged to ramp up efforts to protect and restore the Sound through a new initiative and as a public-private partnership.

The seventh Puget Sound Georgia Basin Research Conference convened from March 29 to 31, 2005 in Seattle. The Puget Sound Action Team and the Georgia Basin Action Plan co-hosted the event, which drew 850 scientists, managers, tribes, educators and students from Washington, Oregon, and British Columbia. There were over 350 oral presentations and nearly 100 technical posters presented at the conference.

The Puget Sound Action Team commissioned the Climate Impacts Group (UW) to compile a report summarizing the latest scientific findings on the impact of climate change on Puget Sound. The report includes historical trends of temperature and precipitation for the region, and provides predictions on how projected climate change may impact water quality and biological resources in Puget Sound.

A transboundary workgroup representing scientists from Puget Sound and the Georgia Basin completed work on a set of ecological indicators for the shared waters. The indicators are in the process of being posted on an interactive Web site hosted by EPA which will be available for public use in 2006.

Coordinating Science in Puget Sound

The Puget Sound Assessment and Monitoring Program (PSAMP) began an internal program review early in 2005. The reviewers included PSAMP committees as well as scientists and managers from other programs who evaluated the PSAMP's activities in three key areas: nutrients and pathogens, contaminants and nearshore habitat. The review indicated that PSAMP is succeeding in its core mission of evaluating and characterizing the condition of Puget Sound. However, it found that the program is not successful under the current funding and structure to: 1. adequately evaluate the effectiveness of management activities, and 2. conduct diagnostic studies on targeted issues that emerge from the monitoring data. The PSAMP committees are currently developing strategies to address recommendations that resulted from the review.

Action Team partners participated in the Governor's Forum on Monitoring. Action Team staff co-chaired an estuary workgroup that developed a list of ecological indicators for the *2006 State of the Salmon* report. This involved planning and coordinating workgroup meetings to develop a final report for the Forum on October 5, 2005.

The Pacific Northwest Aquatic Monitoring Partnership (PNAMP) estuary subcommittee developed a draft survey tool designed to compile an inventory of all marine and freshwater monitoring underway in the Northwest. Action Team staff and other partners participated in the effort. This tool will be finalized in early 2006, and used to solicit information on the monitoring currently underway in part to identify gaps and research needs.

Measures of Progress and Significant Accomplishments for 2004-2005

Priority: Clean up contaminated sites and sediments

Measure of Progress	Results
Site cleanups: Ecology manages clean-up actions at contaminated sediment sites and tracks the cleanup of these sites. When a cleanup is complete it meets Ecology's sediment management standards. This can occur as a result of natural recovery or cleanup under the authority of the state's Model Toxics Control Act or the federal Superfund. Some sites are cleaned up by removal of contaminated sediments as part of navigation dredging.	Exact acreage figures for the biennium are not available but Ecology's *Sediment Cleanup Status Report*, June 2005, estimates that contaminated sites totaling 850 acres have been cleaned up since standards were adopted in 1991, and another 150-305 acres have been cleaned up through navigation dredging over the past 17 years. In 2005, Ecology reports 75 active marine sediment cleanup sites, compared to 71 in 2003. Of those, 24 are in cleanup or monitoring, compared to 12 in 2003. In 2003, 17 sites were listed as needing no further action. That number increased to 23 in 2005, or 20 percent of the sites in active cleanup status.

▶ Other Significant Accomplishments

In June 2005, the Sediment Cleanup Status Report was published by the Department of Ecology Toxics Program.

Priority: Reduce continuing toxic contamination and prevent future contamination

Measure of Progress	Results
Oil Spills: Reduce the number of 25 – 10,000 gallon spills to 35 and reduce the volume of spilled oil reaching surface waters to 30,000 gallons.	The number of spills in the range of 25-10,000 gallons for July 1, 2004 to June 30, 2005 was 11, and the volume spilled was 5,779 gallons.
Mercury reduction: Increase fluorescent lamp recycling from 20 to 30 percent in fiscal 2004 and to 40 percent by June 2005 as part of the mercury cleanup plan.	In September 2005 Ecology and Health reported reaching a 30% per-year goal in fluorescent light bulb recycling. Ecology's and Health's efforts included working with retail stores statewide to label fluorescent bulbs. A survey in Thurston and King counties measured a 57% level that are labeled that may represent a 50% statewide level if extrapolated to other counties. In schools, Ecology and Health measured a 25% routine collection and recycling of light bulbs per year and conducted a study targeting eight schools to determine barriers to success to improve future performance. The study resulted in recycling of 13,152 of several types of lamps, which represents approximately one-quarter pound of mercury. Health collected 1,329 thermostats in 2004 and 2,681 thermostats in 2005. Ecology's and Health's mercury collection program also targeted and measured sources including auto recyclers, dentists, hospitals, demolition contractors, recreational mining, utility switches and relays, veterinarians, and wastewater treatment plants (measures for veterinarians and utility switches were extrapolated from national figures). A partnership with the Washington Dental Association resulted in over 90% reduction of amalgam waste discharges—a reduction of approximately 400 pounds of mercury released per year. Most state dentists installed amalgam separators by the end of 2005. Over 1,000 pounds of bulk mercury have been collected from K-12 schools in 2004-2005. Beginning January 1, 2006, it became illegal for schools to have bulk mercury on their premises. As implementation of the Mercury Chemical Action Plan continues, Ecology and Health staff will identify barriers to recycling and help remove them at targeted sources so as to improve progress toward the goals and targets of the plan.
Water cleanup plans: Submit toxic-focused water quality cleanup plans or technical studies to EPA.	An Ecology-led Water Cleanup plan for mercury and arsenic for the Stillaguamish River and Portage Creek was approved by EPA.
Boater/marina education: Education to prevent and respond to small spills.	Washington Sea Grant Program distributed 710 oil spill prevention kits to shellfish growers, fishermen, marine operators and recreational boaters; held 5 fishing vessel safety workshops that targeted over 100 fishing vessel operators; held 4 Harbormaster Conferences that educated approximately 32 marina operators and staff, and provided outreach to 80 marinas in Puget Sound on how to prevent small spills. A spill prevention education message in the Marine Yellow pages reached over 15,000 vessel operators and marine industry representatives.

▶ Other Significant Accomplishments

Reducing Toxic Substances

From July 1, 2004 to June 30, 2005, the Washington Department of Agriculture collected 22,000 pounds of waste pesticides in the Puget Sound basin.

The backlog of industrial wastewater discharge permits in the Puget Sound basin as of June 30, 2005 was 16 percent. This represents 119 of 742 industrial facilities that had expired or administratively extended permits.

The backlog of municipal wastewater discharge permits in the Puget Sound basin as of June 30, 2005 was 21 percent. This represents 25 of 119 municipal facilities that had expired or administratively extended permits.

Ecology staff made progress in the Persistent Bioaccumulative Toxins (PBT) Reduction initiative, developing an interim draft PBDE (polybrominated diphenyl ether) Chemical Action Plan with the Department of Health. Ecology delivered the interim plan to Gov. Locke in January 2005 to reduce PBDE flame retardants commonly found in everyday products. Ecology also began a rule-making process to establish procedures to develop additional chemical action plans for PBTs that pose a risk to human health or the environment.

Ecology and Health began implementing the Mercury Chemical Action Plan (February 2003), which was the first chemical action plan developed under the PBT initiative.

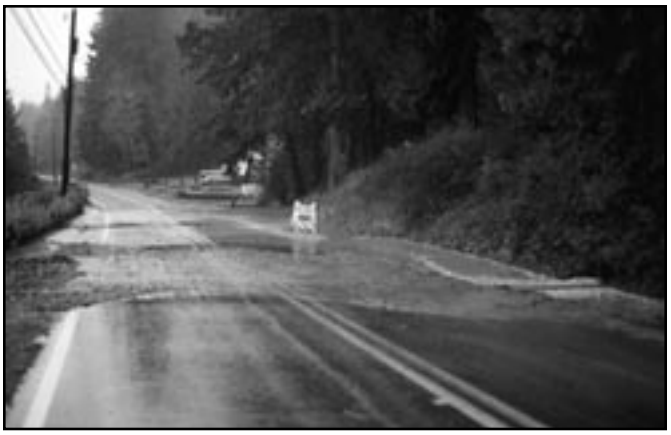
Protecting the Sound from Oil and Hazardous Spills

Ecology's Spill Prevention, Preparedness and Response Program continued efforts to prevent, prepare and respond to oil and hazardous material spills by:

- Completing over 800 inspections of large ships and major oil terminals within Puget Sound.
- Initiating rule-making to address the risk of spills posed by oil transfer operations.
- Conducting a study of the state's tug escort system for oil tankers.
- Funding the Neah Bay Rescue tug to provide additional protection for ships that lose propulsion or steering along Washington's rugged outer coast and the western Strait of Juan de Fuca.
- Completing work that will lead to adopting the Oil Spill Contingency Plan by June 2006.
- Completing five major unannounced and about 200 routine oil spill contingency plan drills.
- Responding to over 3,500 oil and hazardous material spills within 24 hours from five field locations.

On October 14, 2004, the ConocoPhillips oil tanker Polar Texas spilled a large volume of heavy oil into Dalco Passage near Tacoma. The lack of an identified responsible party, slow initial response, and poor visibility resulted in delays that were rapidly overcome when Ecology and the Coast Guard fielded a unified response consisting of 286 people, 10 oil skimmers, five miles of containment boom, three helicopters, and numerous work boats. The 2005 legislature created the new Oil Spill Advisory Council, and provided $1.4 million in supplemental funds for Ecology to implement the recommendations of the Oil Spill Early Action Task Force and improve the state's ability to rapidly and aggressively respond to oil spills.

Priority: Reduce the harm from stormwater runoff



Measure of Progress	Results
Shellfish areas: Positive changes in the conditions and classifications of shellfish growing areas affected by stormwater runoff, including Drayton Harbor, north Dyes Inlet, North Bay and Henderson Inlet.	In the second year of the biennium, Washington Department of Health downgraded 49 acres in Henderson Inlet to a more restricted harvest classification because of ongoing water quality pollution.
Stormwater management: Puget Sound jurisdictions adopt comprehensive stormwater programs in the biennium, representing an increase over the jurisdictions with comprehensive programs in late 2001.	In Spring 2004, Action Team staff surveyed jurisdictions identified under NPDES Phase II coverage, as well as all remaining Puget Sound counties and marine shoreline cities. The final survey report provides a baseline for future comparisons of progress. Survey results for 33 cities and counties (a 47% response rate) showed that 82% of responding local governments are implementing at least half of the program elements, and 55% are implementing at least two-thirds of the program elements.
Combined Sewer Overflows: Reduction in the number and volume of combined sewer overflows (CSOs), consistent with reduction plans approved by Ecology.	Ecology reported on progress for 7 CSO jurisdictions: • The City of Port Angeles, has 5 CSO discharge locations. The City is updating its CSO control plan and plans to begin design work on the first phase of CSO reduction work this year. • King County and the City of Seattle completed two major projects to reduce discharges to south Lake Union and southwest Lake Washington. • The City of Bremerton completed 3 large CSO construction projects in the east Bremerton area, eliminating a number of CSOs to meet its fast-track schedule. • The cities of Snohomish and Everett completed and submitted for approval facility plans to correct their CSO discharges. • The City of Mount Vernon submitted for approval a facility plan to expand and upgrade its wastewater treatment plant to provide capacity for intercepted CSO flows.
NPDES permits: Issuance or reissuance of all NPDES municipal, industrial and construction stormwater permits.	Ecology issued an updated industrial National Pollutant Discharge Elimination System (NPDES) permit, a draft construction NPDES permit for public review, and preliminary draft municipal NPDES permits for public review.

Measure of Progress	Results
Highway runoff: Revision of a highway runoff manual that is technically equivalent to the Ecology *Stormwater Management Manual for Western Washington.*	Washington State Department of Transportation (WSDOT) began to implement the *Highway Runoff Manual*. Ecology reviewed the manual to determine equivalency to the Ecology stormwater manual and provided a conditional approval on March 15, 2004. There is a pending 2005 revision to the manual that Ecology will review when completed.
Low impact development (LID)**:** Increases in the number of local ordinances and regulations that allow for or encourage low impact development.	Whatcom County adopted local regulations to allow limited LID measures in the Lake Whatcom and Lake Samish watersheds. Kitsap County amended its ordinance to allow some LID practices and incentives. Pierce County adopted LID practices into its design standards.
LID research: Effectiveness of LID measures in Puget Sound settings evaluated by project-specific monitoring.	Pierce County WSU Extension began monitoring a LID project, the Meadow on the Hylebos. The City of Seattle continued to monitor the SEA Streets project, providing the region's most complete monitoring of an LID project. WSDOT installed and is monitoring Compost-Amended Vegetated Filter Strips along a stretch of Interstate 405 in Kirkland.
WSDOT facilities: Report on the number of improvements to WSDOT stormwater facilities in the NPDES Phase I areas of the Puget Sound lowlands.	WSDOT constructed 12 detention ponds, 2 detention vaults, 2 infiltration BMPs and 26 linear treatment facilities as reported in the *NPDES Progress Report for the Cedar-Green, Island-Snohomish, and South Puget Sound Water Quality Management Areas* (September 2005). WSDOT also completed a retrofit project on one outfall in Puget Sound.

▶ Other Significant Accomplishments

State Guidance and Technical Assistance

Ecology updated the *Stormwater Management Manual for Western Washington* in February 2005.

The Action Team staff and Pierce County Washington State University Extension published the *Low Impact Development Technical Guidance Manual for Puget Sound.* Action Team and Ecology staff, WSU Extension and Washington Sea Grant water quality field agents helped promote low impact development through citizen and local government education, realtor classes, and demonstration projects.

CTED developed a model clearing and grading ordinance for use by local governments in partnership with Ecology and the Action Team staff and with stakeholder input from the development community.

The Action Team staff began a project to help five cities and six counties revise their regulations to better integrate low impact development into local standards, funded in part by Clean Water Action Section 319 funds administered by Ecology and awarded by an interagency work group to implement the statewide Nonpoint Pollution Prevention Plan.

Training to Reduce Pollution from Construction

WSDOT provided training to 256 of its employees, and the Association of General Contractors, through an approved training program, trained 544 contractor personnel on erosion and sediment control and spill response.

Priority:
Prevent nutrient and pathogen pollution caused by human and animal wastes

Measure of Progress	Results
Shellfish acres: Restore 1,000 acres of shellfish growing area to approved status for commercial harvest.	In the second year of the biennium Health upgraded 149 acres and downgraded 475 acres for a net loss of 326 commercial acres. The net loss in the second year was offset for the entire biennium by a net gain of 2,765 acres in the first year of the biennium to yield an overall increase in commercial acreage of 2,439 acres. State, tribal and local governments and others carried out shellfish closure response strategies to correct water quality problems in numerous areas to protect and restore water quality for shellfish harvesting, including Henderson Inlet, Nisqually Reach, Filucy Bay, Burley Lagoon, Lower Hood Canal, Dyes Inlet, Dungeness Bay, Portage Bay and Drayton Harbor.
Shellfish threatened areas: Prevent the downgrade of all threatened shellfish growing areas.	Health listed 17 shellfish areas as threatened with harvest restrictions due to water pollution in 2004. Of these areas in the second year of the biennium DOH downgraded 49 acres in Henderson Inlet; downgraded 27 acres and upgraded 99 acres in Burley Lagoon; and upgraded 50 acres in North Bay.
Shellfish and onsite systems: Positive changes in the conditions and classifications of shellfish growing areas affected by sewage systems and concentrations of onsite sewage systems, including Similk Bay, Burley Lagoon, Lynch Cove, Quartermaster Harbor, Yukon Harbor and Hoodsport.	In the second year of the biennium, Health downgraded 27 acres and upgraded 99 acres in Burley Lagoon.
Water cleanup plans: Submit fecal and nutrient contamination water quality clean up plans or technical studies to EPA.	Water cleanup plans led by Ecology were approved by EPA during the 2004-2005 period for the following pollutants and water bodies: • Stillaguamish River and Portage Creek for fecal coliform and dissolved oxygen. • Issaquah Creek Basin, South Prairie Creek and Dungeness Bay (expanded area) for fecal coliform.
Municipal permits: Issue National Pollutant Discharge Elimination System (NPDES) permits during fiscal 2004 and reduce the permit backlog.	The backlog of municipal wastewater discharge permits in the Puget Sound basin as of June 30, 2005 was 21 percent. This represents 25 of 119 facilities that had expired or administratively extended permits.

▶ Other Significant Accomplishments

Protecting and Restoring Shellfish Growing Areas

Health monitors water quality conditions, identifies threats, and recommends corrective actions to partner agencies and organizations. The agency continued to implement its comprehensive monitoring, classification and restoration program, including publishing annual growing area reports for all commercial shellfish areas and the annual list of shellfish areas threatened with harvest restrictions.

Action Team staff worked with state, local and shellfish industry partners to develop and disseminate a series of fact sheets on the heritage and economic, cultural and environmental value of the state's shellfish resources called *An Abundance of Riches*.

Washington Sea Grant program facilitated three State of the Oyster shellfish sampling events for waterfront property owners in Mason County. Volunteers contributed $3,440 to pay for laboratory fees to process 83 fecal coliform tests and 43 *Vibrio parahaemolyticus* tests.

The non-profit Puget Sound Restoration Fund, Washington Sea Grant program and other organizations produced publications and continued to enhance programs promoting small-scale and community shellfish farming in Drayton Harbor and other areas, including creation of the Henderson Inlet community shellfish farm. The Jefferson County Marine Resources Committee and WSU Extension Jefferson County seeded over 200,000 Olympia Oysters in Discovery Bay with local volunteers.

Managing Onsite Sewage Disposal Systems

Health finished drafting a rule for State Board of Health consideration that requires Puget Sound local health jurisdictions to adopt a risk-based management plan for local onsite sewage programs.

Health and Action Team staff continued work with local health agencies to develop Geographic Informatin System (GIS) methods for associating shellfish harvest areas with concentrations of residential and other development that use onsite sewage systems.

Ecology provided funds to support innovative local regulatory programs and repairs to individual onsite sewage systems. Health provided technical training to local regulators.

Progress noted in onsite sewage system management by local health jurisdictions includes the following:

- Whatcom County continued to implement its policy requiring more stringent regulatory standards for onsite systems installed and operated in the Lake Whatcom watershed.
- Clallam County developed an application for Ecology nonpoint source funds to assist the development of a risk-based management plan.
- Kitsap County continued to use risk-assessment techniques to annually prioritize Pollution Identification and Correction targets.
- Skagit County identified the Dewey Beach-Yokeko Point-Quiet Cove area as needing risk-based management and initiated a process to justify formal designation of an "area of special concern." County health staff used GIS technology to do a parcel-level assessment of system conditions and follow-up needs.
- Thurston County continued work on a risk-based monitoring program for the Henderson Inlet Shellfish Protection District.

Reducing the Impacts of Animal Waste

The Conservation Commission administers Puget Sound biennial plan funds to implement the *2003-2005 Puget Sound Water Quality Work Plan*. In a *Report of Accomplishments* for calendar year 2004, the Commission reported the following Soundwide results for this funding source as well as funds leveraged by the Puget Sound funds:

- Total number of conservation/farm plans completed: 44
- Total number of cooperators who implemented Best Management Practices (BMPs): 109
- Total number of BMPs implemented: 166
- Of the implemented BMPs, total number of acres that will no longer contribute to surface or groundwater pollution: 882

The report lists a number of additional accomplishments of individual Conservation Districts such as landowner, school and public education, native plant sales and plantings, watershed planning assistance, water quality

Hood Canal Low Dissolved Oxygen: An urgent response to an emerging problem

Hood Canal has had a history of low dissolved oxygen levels resulting in fish kills documented as far back as the early 1960s. In recent years the problem became more acute, and in 2003 Hood Canal suffered significant fish die-offs. Subsequent monitoring data documented the dissolved oxygen levels at their lowest in recorded history, and indicate that period of low oxygen lasted longer than did similar periods in the past. A coordinated state, federal, local and tribal response produced the results described below.

Coordinating Among Partners

The Hood Canal Dissolved Oxygen Program (HCDOP) is a partnership of 38 organizations that conducts monitoring, modeling and analysis and develops potential corrective actions to address the low dissolved oxygen problem in Hood Canal. Action Team staff serve as chair of the HCDOP coordinating group and co-manage the corrective action and education component of the group with the Hood Canal Coordinating Council.

The Hood Canal Watershed Education Network comprises several organizations that are conducting education and public involvement activities in the Hood Canal Watershed. State agencies and Washington Sea Grant and WSU Extension play an integral role in this group. The Action Team hosts a Web site for information about Hood Canal's water quality problems and what people can do to help, and partners have broadly distributed Ecology's Oil Spill Response phone number for the public to notify partners of fish kills.

Starting Early Actions to Reduce Human Impacts

Action Team staff and the HCCC collaborated to produce the *Hood Canal Low Dissolved Oxygen Preliminary Assessment and Corrective Action Plan (PACA)* in May 2004. The plan identified the most likely primary human causes of nutrient pollution and the most feasible corrective actions or fixes to those human-caused problems. Federal funding of $500,000 obtained through the assistance of U.S. Representative Norm Dicks and $100,000 from the Washington State Legislature, coupled with funds from Ecology and Action Team

staff initiated the projects listed below in October 2004. Ecology, the Conservation Commission, Health and other agencies provided technical assistance and advice for many of these projects.

- Mason County analysis of options to manage wastewater from homes and businesses from Hoodsport to the Skokomish River—$57,000.
- Hood Canal Coordinating Council to assess new septic system technologies and educate shoreline residents and explore incentives—$160,000.
- Health to research current onsite system technologies to reduce nitrogen $28,000
- The Washington Onsite Sewage Association to create a training curriculum about technologies to remove nitrogen and hold two training sessions for Hood Canal local government and private professionals—$28,000.
- Three demonstration projects to test nitrogen-removing treatment technologies of onsite systems:
  - Recirculating sand filters—$36,000.
  - Cluster system with upland discharge and rotating biological contactor—$80,100.
  - Treatment devices that add oxygen—$53,375.
- Skokomish Tribal Nation and American-Canadian Fisheries, Inc. to help create alternative uses for chum salmon carcasses—$187,000.
- Mason Conservation District to evaluate innovative technologies to treat agricultural livestock waste— $12,000.
- PSAT contract with private consultants to review feasible methods of artificial aeration to replace oxygen—$10,000.
- Kitsap County Health District to assess nutrient pollution along a portion of Kitsap County's Hood Canal shoreline—$44,000.
- University of Washington Sea Grant and Washington State University Jefferson County Extension to educate shoreline landowners about nutrient-reducing yard care and onsite sewage disposal system maintenance—$90,000.

Building Science to Determine the Causes

The HCDOP Integrated Assessment and Modeling Study is a three-year study to use marine, freshwater and biota monitoring data in developing a computer model. The model will quantify the role the various natural processes and human actions are playing to control the concentrations of dissolved oxygen in Hood Canal and will be used to test corrective action scenarios. With the assistance of U.S. Representative Norm Dicks and other members of the Washington Congressional Delegation, the U.S. Geological Survey received $350,000 and the University of Washington Applied Physics Laboratory received $1.4 million for the study. Funds were distributed to 17 organizations collaborating on the study, which began in February 2004. Results from the study will be funneled to the Corrective Action and Education Program under the HCDOP to better target actions as causes are better understood. The study builds on previous work by UW Puget Sound Regional Synthesis Model (PRISM) and Ecology's Puget Sound Assessment and Monitoring Program (PSAMP) work, and includes a citizen monitoring component with members of the Hood Canal Salmon Enhancement Group.

Educating and Informing the Public

Action Team staff developed and mailed informational brochures to reach all Hood Canal residents, established a Web site for public information, and coordinated with many local and regional education partners in partnership efforts. In addition, Action Team staff awarded public education project funds through the Public Involvement and Education (PIE) program to HCCC for workshops for shoreline homeowners,

developers and realtors, and for Mason County WSU Extension to salvage native plants and assist shoreline homeowners in restoring vegetation to protect water quality and habitat.
WSU Extension coordinated education efforts between local governments, non-profits and state agencies. Additional efforts by WSU Extension included:

- Providing shoreline living workshops in Mason County.
- Beginning a focused shoreline homeowner stewardship and education program in Hood Canal called Shore Stewards.
- Promoting broad-based education about pollution prevention through local events, classes, and technical assistance.
- Developing a Hood Canal Watershed Pledge program to engage residents in improving behaviors to protect water quality, reaching approximately 1,600 residents of the basin.
- Establishing a Small Farms educator position in collaboration with the Mason Conservation District to provide one-on-one technical assistance and farm planning, as well as animal nutrient management workshops.
- Developing and distributing over 1,800 educational booklets on onsite sewage system care and maintenance throughout Jefferson, Kitsap and Mason counties.

The Washington Sea Grant Program worked collaboratively with state, local and tribal partners on a number of issues, including:

- Helping secure and coordinate a grant from the Action Team staff with the Skokomish Tribe and American-Canadian Fisheries, Inc. that led to the successful removal of most of the chum carcasses (more than 300,000 or close to 100 percent) from being discarded into Hood Canal.
- Spearheading a campaign to reduce nutrient sources from food particles in onsite sewage disposal systems through distribution of kitchen sink drains in Mason County. With funding from the Action Team, Sea Grant distributed a total of 2,663 screens to 1,740 households as well as motels, resorts and other businesses.
- Leading nearshore education workshops and sessions for shoreline residents to better protect water quality and habitat.
- Organizing the annual Oyster Fest Kids Day in Shelton that educated 477 fourth grade students, 73 community volunteers, 39 parents, and 18 teachers in marine life and marine water quality issues.

Preparing for the Next Phase of Work

Action Team agencies focused many program activities to assist in assessing and addressing Hood Canal water quality. Federal, tribal, and local governments and academic and private partners worked with Action Team partners, state legislators, congressional representatives and the Governor's Office between July 2004 and June 30, 2005 to identify needs, funding sources, priorities for on-the-ground projects, and to test and evaluate innovative technologies. Briefings and tours, legislative reports and testimony led to significant supplemental state funding appropriations requested by the Governor to ramp up corrective actions. As the scientific results become available, partners will sharpen the focus of coordinated actions to areas where they will achieve the greatest benefit to resolve the low dissolved oxygen levels in Hood Canal.

Priority: Protect shorelines and other critical areas that provide important ecological functions

Measure of Progress	Results
Habitat acquisition: Permanent protection of key marine and freshwater habitat properties through: the Department of Natural Resource's (DNR) designation of DNR aquatic reserves and Natural Areas, WDFW conservation easements or land acquisitions, and IAC-administered grants for acquisition or conservation easements.	Approximately 7.8 miles of riparian habitat was acquired for protection. DNR designated the Maury Island Aquatic Reserve of 5,530 acres in November, 2004 and began outreach in spring 2005 around a Cypress Island reserve in the San Juan Islands.
Shoreline plan updates: Whatcom and Snohomish counties, Bellingham, Port Townsend, and Orting complete the inventory phase of the Shoreline Master Program (SMP) update process and complete a draft Shoreline Master Program Amendment document by June 30, 2005.	By June 30, 2005: The City of Port Townsend completed its inventory and had a preliminary draft under discussion. Whatcom County and Bellingham completed inventories. Bellingham completed a preliminary draft of SMP amendments. Whatcom and Snohomish counties and the City of Orting are behind schedule in drafting regulations.
Growth management updates: 2004 updates of critical area ordinances (CAOs) by Whatcom, Snohomish, King, Clallam, Jefferson, Kitsap, and Thurston counties include "best available science" and designate and protect eelgrass and kelp beds, forage fish spawning beaches and shellfish growing areas.	Drafts of all the county CAOs included expanded protections for critical areas, including larger buffers for riparian and wetland areas, and most require scientific reports to inform mitigation actions for development impacts. By June 30, 2005, Whatcom and King counties completed CAOs with protections for water quality and nearshore habitat. Pierce County's CAO update was appealed and ruled as not adequately protective of nearshore high value salmon habitat, and the county submitted a revised update that was approved by the hearings board. As of November 2005, Clallam and Jefferson county CAOs are under appeal and Kitsap and Thurston are still in the process of CAO review and adoption.
Wetland regulations: Number of counties and cities with Ecology comment letters on wetland regulations adopted to include best available science.	Of 117 jurisdictions requiring updates in 2004, all but 9 are in Puget Sound. Ecology contacted 109 of those 117, submitted formal comment letters to 70, submitted draft letters to an additional 6, and at the end of the biennium were working with an additional 12. An additional 8 local governments adopted updated regulations prior to 2004 and several others did not begin their updates until after July 2005.

▶ Other Significant Accomplishments

Protecting Critical Resources

Ecology published Best Available Science guidance for wetlands as follows:

- Volume I *A Synthesis of Science* in March 2005, and Volume 2: *Guidance for Managing and Protecting Wetlands* in April 2005.
- Staff also produced a document on a new wetlands rating system for Western Washington wetlands that was published in August 2004. A training curriculum was developed and implemented through six workshops of the Coastal Training Program conducted through Padilla Bay National Estuarine Research Reserve (NERR). Development of methods for watershed-based restoration is ongoing.
- Ecology developed a document of new policies and guidance to improve the effectiveness of wetlands compensatory mitigation that is under review.
- Ecology assisted local governments in developing and implementing local wetland protection programs including policy and regulatory language, best available science documents and ongoing technical assistance on wetland delineation, function assessment and mitigation measures.

CTED and other state agencies coordinated state agency comments and developed solutions to local problems related to local government Growth Management Act updates, including Critical Areas Ordinance updates. CTED led an interagency effort in cooperation with the Association of Washington Cities and the Washington Association of Counties to develop agreed-upon *Principles Governing State Agency Correspondence* to clarify roles and expectations and better meet the needs of local governments.

Ecology administered funds and led the development of watershed plans under the Watershed Planning Act of 1998. During 2004-2005, watershed plans were approved in the following Water Resource Inventory Areas (WRIAs): WRIA 1-Nooksack, WRIA 2-San Juan, WRIA 6-Island, WRIA 17-Quilcene-Snow, and WRIA 18-Dungeness-Elwha. Watershed plans were completed in WRIA 12-Chambers-Clover, WRIA 13-Deschutes, and WRIA 15-Kitsap but were not approved by all governments. Plans previously approved in 2003-2004 include WRIA 11-Nisqually. Watershed plans are being completed in WRIA 14-Kennedy-Goldsborough, WRIA 19-Lyre-Hoko and WRIA 16-Skokomish-Dosewallips. WDFW and other state agencies assisted in developing and implementing watershed plans and related salmon recovery efforts.

Promoting Stewardship and Public Education

Puget Sound Action Team staff initiated four shoreline landowner workshops with local, tribal and state partners, three in areas with SMP updates underway (one on Bainbridge Island and two in Whatcom County) and one in Hood Canal, where shoreline properties may contribute pollution to the low dissolved oxygen problem. Approximately 300 shoreline landowners attended the events. In a follow-up survey, 74 percent of respondents said the workshop influenced the way they landscape their property, over 90 percent changed their attitude about how to manage shoreline erosion, and over 90 percent shared information from the workshop with family, friends or neighbors.

Washington Sea Grant, Action Team staff and local partners produced a successful series of six shoreline stewardship workshops for over 200 residents of the Key Peninsula-Gig Harbor area in central Puget Sound.

WSU Extension's Mason County shoreline living workshops educated 168 shoreline homeowners and 48 planning staff members about stormwater, water quality and impacts on nearshore habitat. WSU Extension in

Jefferson County trained real estate professionals on shoreline and nearshore processes, and have 41 citizen "water watchers" actively involved in local monitoring and restoration projects.

Preventing Aquatic Nuisance Species

In 2004, the legislature reorganized the Ballast Water Work Group and appointed the Action Team as staff to the committee. Since April 2004, the group has met monthly to study and recommend ways to improve ballast water management in the state. The group will report to the legislature by December 15, 2006 on all issues related to ballast water exchange and treatment methods, management plans, associated costs and availability of feasible and proven treatment technologies that could be installed on vessels calling on Washington ports; costs and funding methods to implement ballast water program; consistency with federal and international standards; and coordination between Washington and Oregon and with west coast programs.

The State Aquatic Nuisance Species (ANS) Committee developed and completed the state Early Detection and Rapid Response Plan for ANS. The plan contains tasks to monitor, report, verify and respond to new invaders, and defines the responsibilities of agencies responding to the invaders. The committee sent the plan to the WDFW to finalize and lead in implementation. Agencies that manage invasive plants and animals will carry out the plan through a memorandum of understanding with WDFW.

Priority: Restore degraded nearshore and freshwater habitats

Measure of Progress	Results
Acres restored: Increase in acreage of tidally and seasonally influenced estuarine wetlands as a result of projects to restore natural habitat forming processes.	Dozens of state, tribal, federal, local and private partners worked to protect or restore over 1835 acres of marine and freshwater habitats and natural processes, including restoring natural tidal hydrology at 3 locations in Puget Sound and reconnecting approximately 11 miles of riparian and floodplain forests to main stream channels.
Shoreline drift cells: Improving the natural functions of one or more Puget Sound drift cells by protecting the natural delivery of sediment and organic matter.	Protection and restoration of natural sediment delivery processes occurred within 5 Puget Sound beach drift cells. The 5 drift cells represented include: 1. Seahurst Park - partial restoration of function in the Three Tree Point to Alki drift cell in Central Puget Sound. 2. Close Property - protection of feeder bluff within Port Orchard Bay. 3. Piner Point - protection of feeder bluff for two divergent drift cells on the south side of Maury Island in Central Puget Sound. 4. Crescent Beach - protection of entire pocket beach between two rocky headlands on Orcas Island. 5. Hansville Beach Park - partial protection of the Point No Point drift cell in Admiralty Inlet.
Invasive spartina: 20 percent reduction in the acreage of *Spartina alterniflora* infestation in Puget Sound.	In 2004, WSDA treated an estimated 528 solid acres—or 82 percent—of the spartina infestation in the Puget Sound basin. Since 1997, the agency has reduced the area of spartina infestation by about 35%—from 1,000 solid acres to 645 acres. The agency used integrated pest management methods to control this invasion including chemical treatment and hand pulling. At current levels of funding, the agency expects to control and eliminate spartina infestations in the basin by 2010.
Freshwater stream miles: Number of miles of riparian habitat restored by June 30, 2005.	Approximately 0.75 miles of riparian habitat were restored, primarily in freshwater areas.

▶ Other Significant Accomplishments

Partnering to restore habitats

The Conservation Commission administers the Conservation Reserve Enhancement Program (CREP) to provide technical and financial assistance through local Conservation Districts to install native trees and shrubs along salmon bearing streams. Since the program began in 1999, the 12 Puget Sound Conservation Districts have brought 2,172 acres and 131.3 miles of riparian area into a program for long-term leases using U.S. Department of Agriculture (USDA) funding. From July 2004 to June 2005, the districts signed approximately 46 contracts with landowners to lease additional agricultural lands along streams in Puget Sound to restore them based on USDA standards.

An implementation team of the Puget Sound Nearshore Partnership compiled over 500 potential projects for nearshore protection and restoration in a database and GIS to form a decision-support tool for restoration. State and federal partners provided technical assistance and funding for restoration and monitoring in the Skokomish estuary, as well as for restoring shoreline sediment transport processes at Seahurst Park in Burien under the Puget Sound and Adjacent Waters authority of the U.S. Army Corps of Engineers.

WSU Extension of Thurston and Mason counties trained 52 volunteers as Master Habitat Restorers to conduct restoration projects on public and private properties.

Eliminating Aquatic Nuisance Species

Action Team partners worked with Department of Fisheries and Oceans, Canada to coordinate a cross-border eradication project in Boundary Bay to prevent the spread of spartina from this area to Whatcom County, which is currently spartina free. Action Team staff coordinated with WDFW, the Port of Vancouver, Ducks Unlimited Canada, Environment Canada and the BC Provincial government to provide volunteers, matching funds and equipment. The removal in Boundary Bay, an important migratory bird area, occurred in July 2004.

WDFW created a state tunicate response committee to respond to newly discovered invasive tunicates in Puget Sound. The committee directed the state to assess the extent of the invasion before making a committed state response to control and eradicate the invader. To accomplish this, WDFW contracted with Washington Sea Grant to train SCUBA divers to identify and report the presence and absence of invasive tunicates at their dive locations. The Action Team staff developed a web-based GIS system to map the location of invasive tunicates reported by divers and funded invasive tunicate identification cards for recreational and commercial divers.

Priority: Conserve and recover orca, salmon, forage fish, and groundfish


Center for Whale Research

Measure of Progress	Results
Forage fish: Forage fish inventories are completed for 30 percent of Puget Sound counties.	The Northwest Straits Initiative (NWSI) reported that inventories were completed for the seven northern counties, including Clallam, Jefferson, Snohomish, Island, Skagit, San Juan and Whatcom. State, tribal and salmon restoration. Regional Fisheries Enhancement Groups conducted inventories in parts of Kitsap County, Hood Canal and Mason, Pierce, King and Thurston counties. GIS mapping is proceeding through NWSI, local government, tribal and state agency efforts. This exceeds the 30% goal.
Orca: State decision on listing orcas in Spring 2004 and, if appropriate, an orca recovery plan completed.	The Washington Fish and Wildlife Commission listed orca as threatened in April 2004 and began developing an orca recovery plan. NOAA Fisheries agreed to reconsider listing Southern Resident Orca under the federal ESA and designated them as endangered in late 2005. The orca recovery plan was not scheduled to be completed during the 03-05 biennium.
Salmon: Puget Sound salmon recovery plan submitted to NOAA Fisheries by June 30, 2005.	The Puget Sound Shared Strategy submitted the *Draft Puget Sound Salmon Recovery Plan* to NOAA Fisheries on June 30, 2005. Included in the plan is a regional chapter on recovery, a regional chapter on nearshore habitat, and 14 watershed chapters developed by local governments and interests. NOAA Fisheries published notice of the plan in early 2006 to begin a public comment period on the plan.

▶ Other Significant Accomplishments

The 2005 Washington State Legislature designated the orca the Washington State marine mammal.

WDFW watershed stewards assisted in the development of 13 watershed scale plans for Shared Strategy including critical data on fish use patterns, timing of runs, habitat conditions and the effects of various stressors on salmon population health. Several watershed stewards assisted in regional planning for South Puget Sound and the Whidbey Basin and participated with PSAT in developing and reviewing the regional nearshore chapter.

In 2004 San Juan County adopted a Marine Stewardship Area for the entire county, and developed a community-based effort to establish targets to address threats to marine resources.

The Washington Fish and Wildlife Commission increased restrictions on groundfish harvest to close all harvest in Hood Canal until dissolved oxygen conditions improve, and in the broader Sound limited the rockfish season, prohibited taking of canary and yelloweye rockfish, and in most areas, required fishers to keep the first rockfish caught.

Public Involvement and Education


Jack Kintner

Under the *2003-2005 Puget Sound Water Quality Work Plan* significant education efforts took place under individual priority activities and programs. However, the Soundwide results also took place through education programs using funds dedicated to implementing the biennial plan. Most of these programs and projects had a number of local, tribal, state, and/or federal partners as well as efforts of many citizen, business, agricultural, environmental, boater, industry and other community partners.

2003-2005 Recommended Actions	Results
Local funding: The Public Involvement and Education (PIE) program should continue to provide funding and technical support for community-based education projects that protect the health of Puget Sound and address priority issues in the 2003-2005 plan.	The Action Team's PIE program funded 36 education and public involvement projects totaling $480,396. This state funding leveraged another $413,768 from contractors for a total of $894,164 spent on projects that engaged communities in caring for Puget Sound's water quality, habitat and species. The projects educated 17,388 people with workshops, trainings, beach walks, fieldwork, and other education materials. PIE projects educated more than 391,000 people with indirect methods such as ads, newsletters, articles and displays. PIE reached people in schools, homes, communities, farmers and businesses with practical information on how to care for Puget Sound.
Local assistance: Washington Sea Grant and WSU Extension water quality field agents should continue to provide local coordination, technical assistance, education, and support for public involvement for regional water quality and habitat groups, local decision-makers, schools, local health jurisdictions, and communities in order to protect Puget Sound and address priority issues in the *2003-2005 Puget Sound Water Quality Work Plan.*	In addition to activities reported for individual priorities, Washington Sea Grant education activities with partners included: 1. the annual Kitsap Water Festival that taught over 1000 children, 50 teachers and 100 parents about fresh and saltwater environmental issues; 2. the Kitsap Salmon tour educated 85 attendees on habitat and the effects of human actions on salmon; and 3. created and implemented the Stillwaters Estuarine Monitoring Program to provide volunteer-collected water quality data to Ecology. WSU Extension activities included: 1. securing funding and beginning to expand the Island County Beachwatchers program to 6 additional northern Puget Sound counties; and 2. conducting 19 realtor courses for license credit hours for 503 participants in Island, Jefferson, Whatcom and Thurston counties on onsite septic systems, LID, site development, shoreline protection, wetlands, environmental regulations, landscaping, woodlands and salmon and streams.

▶ Other Significant Accomplishments

Washington Sea Grant secured funding and formed a partnership with Whatcom County WSU Extension to support a water quality field agent to educate local landowners and the agricultural community in protecting water quality and to assist the Whatcom County Marine Resources Committee and other local groups and partners to in education and stewardship programs to protect and restore shorelines and other critical areas.